EXHIBIT D

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19

20   UNITED STATES DISTRICT COURT

21   NORTHERN DISTRICT OF CALIFORNIA

22   SAN FRANCISCO DIVISION

23 ORACLE AMERICA, INC.   Case No. CV 10-03561 WHA

24   Plaintiff,   **PLAINTIFF'S SUPPLEMENTAL
                                            RESPONSES TO DEFENDANT'S
25   v.   INTERROGATORIES, SET NO. 1
                                            (INTERROGATORY NOS. 1-10)**
26 GOOGLE INC.
                                            **MAY CONTAIN GOOGLE HIGHLY
27   Defendant.   CONFIDENTIAL – ATTORNEYS'
                                            EYES ONLY INFORMATION**
28

PLAINTIFF'S SUPPLEMENTAL RESPONSES TO DEFENDANT'S INTERROGATORY NOS. 1-10
CASE NO. CV 10-03561 WHA
pa- 1457069

1   PROPOUNDING PARTY: Defendant Google Inc.

2   RESPONDING PARTY: Plaintiff Oracle America, Inc.

3   SET NO.:   One (Interrogatories 1-10)

4   Pursuant to Rules 26 and 33 of Federal Rules of Civil Procedure, Plaintiff Oracle

5   America, Inc. ("Oracle") hereby submits the following supplemental responses and objections to

6   Defendant Google Inc.'s ("Google") First Set of Interrogatories.

7   **INTERROGATORY NO. 1:**

8   State in detail Oracle's factual bases for each allegation of damage or harm that Oracle

9   claims to have suffered as a result of any act or omission of Google.

10   **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 1:**

11   As Oracle's damages and harm contentions are subject to ongoing discovery and expert

12   analysis, Oracle objects to this interrogatory as premature. Oracle has not yet completed its

13   investigation of the documents and facts relevant to the claims and defenses asserted in this

14   action, and has not received all relevant documents and information from Google or third parties.

15   Accordingly, Oracle's responses are based on the information reasonably available at this time

16   and Oracle will supplement this response as appropriate under the Federal Rules of Civil

17   Procedure. Subject to these objections, Oracle responds as follows:

18   Oracle is entitled to all legal, statutory, and equitable remedies available. This potentially

19   includes, for example, damages in the form of lost profits Oracle would have made without the

20   infringement, the value of or a reasonable royalty for a license for the rights infringed, and

21   disgorgement of profits made by Google that are attributable to the infringement. The relevant

22   factual inquiries are with respect to past and future damages on a worldwide basis. In addition,

23   because Google's infringement has been willful and intentional, Oracle is entitled to recover

24   treble damages, pursuant to 35 U.S.C. § 284. Oracle is also entitled to recover the costs of suit,

25   prejudgment interest, and attorney's fees under 35 U.S.C. § 285. Oracle also seeks injunctive

26   relief.

27   The factual basis for recovery of the value of the infringed intellectual property includes

28   evidence that a reasonable royalty a willing buyer would have been reasonably required to pay a

PLAINTIFF'S SUPPLEMENTAL RESPONSES TO DEFENDANT'S INTERROGATORY NOS. 1-10
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1

1 willing seller in a hypothetical negotiation for a license to the infringed property at the time of the

2 infringement would have been substantial. These facts include, for example:

3 • A significant licensing history for Java and other patents and software showed that

4 substantial royalties were necessary to protect Oracle's and Sun's business model and

5 marketing program for Java, including the importance of preventing fragmentation of

6 Java, and Google was aware of Java licensing practices and the importance of

7 preventing fragmentation to Sun and Oracle;

8 • Oracle and/or Sun invested significant sums to obtain, develop and improve the

9 intellectual property at issue as well as Java more generally;

10 • Java technologies, including notably the patents and copyrights in suit, had substantial

11 value, as reflected, for example, by Oracle's proposal in March 2009 to buy Java and

12 other software assets from Sun for more than $2 billion and Oracle's eventual

13 acquisition of Sun for $7.4 billion;

14 • Protecting Java and related or ancillary products and services from fragmentation was

15 extremely valuable to Sun and Oracle;

16 • Java and the patented technologies represented and represent significant advantages

17 over alternative development platforms and technologies and therefore had

18 tremendous value to Oracle and Sun, including in the mobile space;

19 • Google recognized the value of Java and the patented and copyrighted technologies at

20 issue, both independently and as part of Android, and recognized the need for a license

21 to use the Java technologies in any mobile platform;

22 • Launching Android was of significant strategic and financial value to Google,

23 including by enabling Google to respond to the threat posed by other mobile platforms

24 to Google's existing and anticipated revenues;

25 • Java and the infringed technologies were extremely important to Google in terms of

26 meeting its strategic goals of quickly developing and launching a mobile platform and

27 building a broad base of developers for that platform;

28

PLAINTIFF'S SUPPLEMENTAL RESPONSES TO DEFENDANT'S INTERROGATORY NOS. 1-10
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2

1

- Google expected that Android would be widely adopted, and used of the infringing

2

technology to ensure widespread distribution of Google ad and application services;

3

- Google expected to earn and has earned large amounts as a consequence of using the

4

infringed intellectual property in Android, including by planning to use using Android

5

(and the infringed intellectual property) to promote sales and licensing of other Google

6

products, such as search and advertising, and reap revenue from third-party

7

development and other sources;

8

- Google avoided paying and expects to avoid paying substantial amounts to

9

manufacturers and others as a consequence of using the infringed intellectual property

10

in Android, such as any revenue sharing payments that would otherwise have been

11

made by Google to handset manufacturers but for Android;

12

- Using the infringed intellectual property in Android provided strategic benefits to

13

Google, including the benefit of obtaining control over Google's own destiny in

14

mobile-based advertising and other applications and services and the reinforcement of

15

Google's dominant position in online advertising across platforms and computing

16

environments;

17

- Significant network effects resulted and were expected from the infringement for both

18

Oracle and Google, including the adverse impact of Android (and the infringement) on

19

the Java brand, the perceived and actual value of Java technology, and the Java

20

ecosystem, and the positive impact of Android on reinforcement of the value of

21

Google's existing position in search, advertising and other markets;

22

- Google would have earned significantly less in the absence of the infringement,

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including but not limited to the mobile space, as compared to the amounts that Google

24

expected to earn and currently earns in connection with and as a result of the

25

infringement;

26

- Google has obtained licenses for other intellectual property;

27

- Reasonable non-infringing alternatives were unavailable, not viable, and/or extremely

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costly to Google;

- Google avoided significant costs as a consequence of the infringement;

- The patented technologies and copyrighted materials were extremely important to Google as compared to any reasonable non-infringing alternatives;

- Oracle and Google were and could be expected to be competitors in the provision of platform software for mobile and other devices;

- Sun and Oracle extensively and repeatedly discussed financial and other terms of a license and terms for development of a compatible mobile platform or Android, including terms relating to the payment of royalties;

- Sun expected that it would earn substantial revenues in connection with a compatible mobile platform, particularly as compared to the incompatible Android platform;

- Sun expected that it would lose substantial revenues from the distribution of a mobile platform incorporating the infringed technologies, and these losses would be particularly high if the platform was incompatible with Java;

- Oracle and Sun made clear to Google that Android, even if compatible with Java, would put Java revenue at risk;

- Google knowingly infringed the Sun/Oracle IP, and therefore put its entire investment in Android and its reputation on the line;

- The value (both absolutely and as a portion or component of Android) of the intellectual property at issue was significant, and that property has a substantial remaining economic life;

- Oracle and Google both had strategies for realizing economic return, including licenses, relating to the infringement;

- Sun and Oracle expected substantial losses, and have in fact incurred losses, as a consequence of the infringement, and Google understood the likelihood of those expected and actual losses, including loss of Java licensing and ancillary revenue opportunities, price or royalty erosion, reduction in market opportunities in markets for Oracle's Java-related products, and other losses as a direct or indirect consequence of demand for and Google's distribution of Android; and

1   • There was significant actual and expected demand for mobile and other devices using

2   Android.

3   A variety of documents showing the facts above have been produced in discovery or are publicly

4   available.[1] Google's initial deposition testimony also supports a number of these facts.[2] Others

5   will be the subject of testimony by Oracle witnesses disclosed in Oracle's initial disclosures, and

6   still others may be the subject of third party testimony. Some of the evidence of these facts, as

7   well as evidence of other relevant factors about which Oracle does not yet know, is uniquely

8   within Google's and others' possession. Google has made public statements regarding some of

9   these facts, including for example the success of distribution of Android, Google's expectation of

10   revenue therefrom, and the profitability thereof.[3]

11   The factual basis for a claim for recovery of Google's profits attributable to the

12   infringement also includes, for example: (1) the fact that Google has a business model for

13

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[1] *See, e.g.*, GOOGLE-01-00017250; GOOGLE-14-00001233; GOOGLE-01-00017299; GOOGLE-01-00017315; GOOGLE-01-00019529; GOOGLE-01-00019527; GOOGLE-01-00025576; GOOGLE-01-00023102; GOOGLE-01-00053552; OAGOOGLE0000357494; OAGOOGLE0000140115; OAGOOGLE0000139561; Java licenses produced at OAGOOGLE0000052860-OAGOOGLE0100062852; Sun-Microsoft agreements available at http://www.sec.gov/Archives/edgar/data/709519/000119312504155723/0001193125-04-155723-index.htm.

[2] *See, e.g.,* April 5, 2011 Rule 30(b)(6) Deposition.

[3] For example:

• Google CEO Eric Schmidt was recently reported to note that "Google is positioning itself to earn $10 billion or more per year in the mobile device business, thanks to its Android operating system," *see Wall Street Journal*, July 28, 2010 (available at http://blogs.wsj.com/digits/2010/07/28/eric-schmidt-on-google%E2%80%99s-next-tricks/);

• Google's Andy Rubin recently stated that activation of Android devices has reached 300,000 per day, *see Wall Street Journal*, December 9, 2010 (available at http://blogs.wsj.com/digits/2010/12/09/google-more-than-300000-android-phones-activated-each-day/);

• It was reported in December 2010 that "Google executives said the company was on track to generate $1 billion annually in mobile-related revenue," *see Wall Street Journal*, "Google to Release new 'Nexus' Phone," December 7, 2010 (available at http://online.wsj.com/article/SB10001424052748704156304576003454213544140.html);

• Google's CEO Eric Schmidt has been reported as stating that "Android-based phones already generate enough new advertising revenue to cover the cost of the software's development"; *Newsweek*, "Android Invasion," October 3, 2010 , at 3 (available at http://www.newsweek.com/2010/10/03/how-android-is-transforming-mobile-computing.html)

• Mr. Schmidt has also been reported as stating: "Trust me that revenue is large enough to pay for all of the Android activities and a whole bunch more." *International Business Times,*, "Does Google Have an Android Revenue-Model?," August 10, 2010 (available at http://www.fool.com/investing/general/2010/08/10/does-google-have-an-android-revenue-model.aspx).

1   realizing substantial revenue from Android, including, at a minimum, revenue and gross profits

2   from the sale or licensing of Android-compatible applications,[4] developer access to Google

3   resources or accounts,[5] and Google mobile search, location services, advertising, and other

4   services[6] (in addition to other Android-related revenue and profit streams obtained by third-party

5   application developers, device manufacturers and others); (2) the fact that Google has realized

6   substantial revenue as a result of the infringement; (3) the fact that that Google has a strategic

7   goal of ensuring that it is not dependent on third party (particularly competitor) platforms for

8   success in the mobile environment, including losses or reductions in revenue Google did and does

9   not incur because it was able to avoid certain challenges to its core businesses;[7] (4) the fact that

10 Google has experienced significant benefits in its preexisting application and service businesses

11 as a result of the success of Android and because of the infringement; and (5) the fact that Google

12 avoided costs as a consequence of the infringement, including costs of developing or acquiring

13 non-infringing alternatives (to the extent they existed or exist), either within or outside the Java

14 context, that would have enabled Google to achieve its revenue and strategic objectives. Much of

15 the evidence of these facts, as well as evidence of other relevant factors about which Oracle does

16 not yet know, is uniquely within Google's possession.

17   In addition to the above, the factual basis for a claim for recovery of Oracle's lost profits

18 (both with respect to diverted or lost revenues and profits and loss of ancillary, convoyed or other

19 opportunities) includes, for example: (1) the fact that Sun and Oracle have had business plans for

20

21 [4] *See, e.g.*, *Mobile Entertainment*, "Mobile Entertainment's Guide to Android," May 2010 (available at
    http://www.androidtapp.com/android-growth-statistics-projections/) (presenting projections and assumptions on
22 growth and average pricing of, and revenue from, Android applications).

23 [5] *See, e.g.,* Pocketnow.com*,* "How Does Google Make Money with Android?," October 3, 2010 (available at
    http://pocketnow.com/android/how-does-google-make-money-with-android).

24 [6] *See, e.g., Wall Street Journal*, "Google Executive Says Local Advertising Is Top Focus," December 7, 2010
    (available at http://blogs.wsj.com/digits/2010/12/07/google-executive-says-local-advertising-is-top-focus/)
25 (statements regarding success and growth of Google's mobile advertising business).
    [7] For example, as Google reported in a recent public filing, "More individuals are using devices other than personal
26 computers to access the internet. If users of these devices do not widely adopt versions of our web search technology,
    products, or operating systems developed for these devices, our business could be adversely affected." Google Form
27 10Q for the period ended September 30, 2010, p. 46 (available at
    http://investor.google.com/documents/20100930_google_10Q.html).

28

1   Java that are and have been premised in significant part on preventing or minimizing "forks" in

2   Java and developing and maintaining a wide base of use by both programmers and end users; (2)

3   the fact that Sun and Oracle have lost and will lose significant Java licensing opportunities,

4   suffered and will suffer price and royalty erosion, experienced and will experience reduction in

5   market opportunities in markets for Oracle's Java-related products and services, and have

6   suffered and will suffer other losses as a direct or indirect consequence of demand for and

7   Google's distribution of Android; (3) the fact that the infringement has had and will have

8   significant adverse impact on the Java brand, on the perceived and actual value of the Java

9   technology, and the Java development community; (4) the fact that Sun and Oracle have lost and

10 will lose cross-sell and up-sell opportunities based on the ability to use either Java or a mobile

11 platform to promote other Oracle products and services; (5) the fact that Sun and Oracle have

12 incurred and will incur additional costs to undo the damage caused by the infringement; and (6)

13 Sun and Oracle have suffered and will suffer harm to their reputation and goodwill, including loss

14 in value to the reputation and brand value of Java. Google itself recognizes the value and

15 importance of avoiding fragmentation of software platforms, including Android.[8] Oracle's Java

16 technology has generated significant revenue for Sun and Oracle, much of it related to high-

17 margin licensing, application sales, and other revenue opportunities in the mobile environment

18 and elsewhere that have been and continue to be diminished by Google's infringement of

19 Oracle's Java patents and copyrights.

20   In addition to many of the items described above, the factual basis for Oracle's claim of

21 irreparable harm includes, for example:

22

23

24 [8] *See, e.g.*, Ars Tecnica, "Google: carriers should give Android users freedom to unlock bootloader," December 2010 (available at http://arstechnica.com/gadgets/news/2010/12/google-carriers-should-give-android-users-freedom-to-unlock-bootloader.ars) ("Google has very effectively used its exclusive control over the Android Market and Google-

25 branded applications as a means of forcing most of the carriers and handset makers to refrain from fragmenting the platform. . . ."); *Newsweek*, "Android Invasion," October 3, 2010, at 4 (available at

26 http://www.newsweek.com/2010/10/03/how-android-is-transforming-mobile-computing.html) ("Such fragmentation has been the Achilles' heel of every open-source project. To counter it, Rubin and his team have created a

27 compatibility test suite, a list of things a phone must have in order to carry the Android brand and to run applications like Google Maps.").

28

1   • Oracle practices the copyrights and patents in suit in its own Java-related products and

2   authorizes others to practice them through its Java licensing program.

3   • Google has violated Oracle's exclusive rights to practice and to authorize others to

4   practice the copyrights and patents.

5   • Google's infringement depresses the market for Oracle's Java-related products and

6   causes Oracle customers to question the value of their Java licenses, damaging the

7   goodwill associated with Oracle's Java products and brand.

8   • Google's infringement has caused fragmentation, including through the fact that

9   Android runs an unauthorized version of various Java libraries (Apache Harmony),

10   thereby causing confusion among software developers. Particularly in light of

11   Android's popularity, Oracle is irreparably harmed each time a programmer learns and

12   practices Android over Java.

13   • Google's infringement impedes the growth of a Java applications market that would

14   fuel demand for authorized Java and Java-related products, causing further loss of

15   market share.

16   The foregoing answer supplements Oracle's initial disclosures pursuant to Fed. R. Civ.

17 Proc. 26(a)(1) and its previous response to this interrogatory. The information provided in this

18 supplemental response is subject to theories and additional factual support to be set forth in any

19 expert reports. In light of the date specified by the Court for disclosure of affirmative expert

20 reports on damages, Oracle notes that because significant evidence relating to Oracle's damages

21 claims—including, for example, disgorgement of Google's profits from the infringement,

22 Google's expectations as to the value of the infringed intellectual property, and the appropriate

23 amount of damages corresponding to Google's willful infringement—is in Google's possession,

24 timely production of information and documents relating to damages by Google will be necessary

25 in order for Oracle's experts to be able to provide detailed quantifications of Oracle's damages in

26 their initial reports.

27

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8

INTERROGATORY NO. 2:

State in detail Oracle's factual bases for its claim of direct copyright infringement, specifically including a comparison of each element of Java software, including without limitation any class libraries, API packages, method names, class names, definitions, organizational elements, parameters, structural elements, and documentation, to the corresponding Android element, as Oracle did in Exhibit J to its Amended Complaint.

FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 2:

Oracle owns many copyrights in the code, documentation, specifications, libraries, and other materials that comprise the Java platform. As new versions of the Java platform were developed and the materials revised, the copyrights were registered with the United States Copyright Office, including TX0004416302; TX0004326014; TX0004616088; TX0005271787; TX0005316757; TX0005316758; TX0005359984; TX0005359985; TX0005359986; TX0005359987; TX0005392885; TX0006066538; TX0006143306; and TX0006196514. Google has infringed Oracle's copyrights.

Android Application Programmer Interface (API) package specifications (whether or not from the Apache Harmony project) that correspond to Oracle's Java API specifications are unauthorized derivative work, and Google's unauthorized copying and distribution of them is copyright infringement. A comparison of Android's API package specifications (available at http://developer.android.com/reference/packages.html) with Oracle's copyrighted Java API package specifications (for example, available at http://download.oracle.com/javase/1.5.0/docs/api/, http://download.oracle.com/javase/1.4.2/docs/api/, and http://download.oracle.com/javase/1.3/docs/api/)[9] demonstrates that the following Android package specifications are derived from or substantially similar to Oracle's copyrighted Java API package specifications:

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[9] Oracle's copyright infringement claim applies to all versions of Oracle's Java API specifications and reference implementations from which Android derives, which include J2SE 1.2, J2SE 1.3, J2SE 1.4, and J2SE 5.0.

1   1.   java.awt.font

2   2.   java.beans

3   3.   java.io

4   4.   java.lang

5   5.   java.lang.annotation

6   6.   java.lang.ref

7   7.   java.lang.reflect

8   8.   java.math

9   9.   java.net

10   10.   java.nio

11   11.   java.nio.channels

12   12.   java.nio.channels.spi

13   13.   java.nio.charset

14   14.   java.nio.charset.spi

15   15.   java.security

16   16.   java.security.acl

17   17.   java.security.cert

18   18.   java.security.interfaces

19   19.   java.security.spec

20   20.   java.sql

21   21.   java.text

22   22.   java.util

23   23.   java.util.jar

24   24.   java.util.logging

25   25.   java.util.prefs

26   26.   java.util.regex

27   27.   java.util.zip

28   28.   javax.crypto

1   29.   javax.crypto.interfaces

2   30.   javax.crypto.spec

3   31.   javax.net

4   32.   javax.net.ssl

5   33.   javax.security.auth

6   34.   javax.security.auth.callback

7   35.   javax.security.auth.login

8   36.   javax.security.auth.x500

9   37.   javax.security.cert

10   38.   javax.sql

11   39.   javax.xml

12   40.   javax.xml.datatype

13   41.   javax.xml.namespace

14   42.   javax.xml.parsers

15   43.   javax.xml.transform

16   44.   javax.xml.transform.dom

17   45.   javax.xml.transform.sax

18   46.   javax.xml.transform.stream

19   47.   javax.xml.validation

20   48.   javax.xml.xpath

21   Some Android package API specifications are substantially similar to selected portions of

22   some of the Oracle Java API package specifications (*e.g.,* java.awt.font, java.beans) while other

23   Android package API specifications are substantially similar to complete portions of other Oracle

24   Java API package specifications (*e.g.,* java.io, java.lang, java.net, java.nio, java.security, java.sql,

25   java.text). Exhibits A-E are illustrative examples.[10]

26

27   [10]   The illustrative examples are taken from http://download.oracle.com/javase/1.5.0/docs/api/ and
http://developer.android.com/reference/packages.html.

28

1   The Android source and object code (whether or not from the Apache Harmony project)

2 that purports to implement Oracle's Java API specifications is unauthorized derivative work, and

3 Google's unauthorized copying and distribution of it is copyright infringement. *See, e.g.*, "What

4 is Android?" (available at http://developer.android.com/guide/basics/what-is-android.html

5 ("Android includes a set of core libraries that provides most of the functionality available in the

6 core libraries of the Java programming language.")); Package Index (available at

7 http://developer.android.com/reference/packages.html), including those API packages listed

8 above, and subsidiary webpages; and source code and documentation files available in:[11]

9 For Android 2.2 ("Froyo"):

10   • dalvik\libcore\security\src\main\java\java\security;

11   • dalvik\libcore\security\src\main\java\javax\security\cert;

12   • dalvik\libcore\security\src\main\java\org\apache\harmony\security;

13   • dalvik\libcore\math\src\main\java\java\math;

14   • dalvik\libcore\math\src\main\java\org\apache\harmony\math;

15   • dalvik\libcore\luni\src\main\java\java;

16   • dalvik\libcore\luni\src\main\java\org\apache\harmony\luni;

17   • dalvik\libcore\luni-kernel\src\main\java\java\lang;

18   • dalvik\libcore\luni-kernel\src\main\java\org\apache\harmony\kernel;

19   • dalvik\libcore\luni-kernel\src\main\java\org\apache\harmony\lang;

20   • dalvik\libcore\nio\src\main\java\java.

21 For Android 2.3 ("Gingerbread"):

22   • libcore\luni\src\main\java\java\security;

23   • libcore\luni\src\main\java\javax\security\cert;

24   [11] Google continues to modify the source code available through http://android.git.kernel.org. Such changes
are subject to the discovery Oracle has propounded on Google. In any event, the cited source code examples are
25 taken from http://android.git.kernel.org/. The citations are shortened and mirror the file paths shown in
http://android.git.kernel.org/. For example, "dalvik\vm\native\InternalNative.c" maps to "[platform/dalvik.git] / vm /
26 native / InternalNative.c" (accessible at
http://android.git.kernel.org/?p=platform/dalvik.git;a=blob;f=vm/native/InternalNative.c) before modification by
27 Google.

28

1   •   libcore\luni\src\main\java\org\apache\harmony\security;

2   •   libcore\luni\src\main\java\java\math;

3   •   libcore\luni\src\main\java\java;

4   •   libcore\luni\src\main\java\org\apache\harmony\luni;

5   •   libcore\luni\src\main\java\java\lang;

6   •   libcore\luni\src\main\java\org\apache\harmony\kernel;

7   •   libcore\luni\src\main\java\org\apache\harmony\lang;

8   •   libcore\luni\src\main\java\java\nio.

9   Google has created and distributed infringing works written in native code, in addition to

10 Java code, that derive from Oracle's copyrighted works. For example, Google makes and

11 distributes dalvik\vm\native\java_lang_Class.c, which is based on Oracle's java.lang.Class

12 specification. Other examples include:

13   •   dalvik\vm\native\java_lang_Object.c

14   •   dalvik\vm\native\java_lang_reflect_AccessibleObject.c;

15   •   dalvik\vm\native\java_lang_reflect_Array.c;

16   •   dalvik\vm\native\java_lang_reflect_Constructor.c;

17   •   dalvik\vm\native\java_lang_reflect_Field.c;

18   •   dalvik\vm\native\java_lang_reflect_Method.c;

19   •   dalvik\vm\native\java_lang_reflect_Proxy.c;

20   •   dalvik\vm\native\java_lang_Runtime.c;

21   •   dalvik\vm\native\java_lang_String.c;

22   •   dalvik\vm\native\java_lang_System.c;

23   •   dalvik\vm\native\java_lang_Throwable.c;

24   •   dalvik\vm\native\java_lang_VMClassLoader.c;

25   •   dalvik\vm\native\java_lang_VMThread.c; and

26   •   dalvik\vm\native\java_security_AccessController.c.

27   *See also, e.g.,* source code files in libcore\luni\src\main\native; libcore\luni-

28 kernel\src\main\native.

1 Google's Android videos directly reference inclusion of Java libraries in Android, *e.g.:*

2 • Google Presentation, entitled "Android: Securing a Mobile Platform from the

3 Ground Up," presented by Rich Cannings (Google's Android Team) at the Usenix 18th Security

4 Symposium (Aug. 12, 2010), available at http://www.usenix.org/events/sec09/tech/.

5 • Google I/O 2010 Video, entitled "A JIT Compiler for Android's Dalvik VM,"

6 presented by Ben Cheng and Bill Buzbee (Google's Android Team), available at

7 http://developer.android.com/videos/index.html#v=Ls0tM-c4Vfo.

8 • Google I/O 2008 Video, entitled "Dalvik Virtual Machine Internals," presented by

9 Dan Bornstein (Google Android Project), available at

10 http://developer.android.com/videos/index.html#v=ptjedOZEXPM.

11 Moreover, Google admits that Android incorporates a subset of Apache Harmony, which

12 it asserts is "an implementation of Sun's Java." (*See, e.g.,* Google's Amended Counterclaims

13 ¶¶ 6-7, 13.)

14 Google has distributed by way of Android and Android-related websites source and object

15 code derived from or substantially similar to Oracle's source code or to decompiled Oracle object

16 code, including:

17 • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Acl

18 EntryImpl.java

19 • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Acl

20 Impl.java

21 • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Gro

22 upImpl.java

23 • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Ow

24 nerImpl.java

25 • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Per

26 missionImpl.java

27 • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Pri

28 ncipalImpl.java

1

- /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/cert/Po

2   licyNodeImpl.java

3

- /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Acl

4   Enumerator.java (which was obtained by decompiling Oracle's

5   /sun/security/acl/AclEnumerator.class)

6

- /dalvik/libcore/luni/src/main/java/java/util/TimSort.java contains a method,

7   rangeCheck, copied from Oracle's java/util/Arrays.java

8

- /dalvik/libcore/luni/src/main/java/java/util/ComparableTimSort.java contains a

9   method, rangeCheck, copied from Oracle's java/util/Arrays.java

10

- /dalvik/libcore/security/src/test/java/org/apache/harmony/security/tests/java/security/C

11   odeSourceTest.java contains comments copied from Oracle's

12   /java/security/CodeSource.java

13

- /dalvik/libcore/security/src/test/java/tests/security/cert/CollectionCertStoreParameters

14   Test.java contains comments copied from Oracle's

15   /java/security/cert/CollectionCertStoreParameters.java

16   Additional supporting evidence of Google's copyright infringement can be found at, *e.g.*,

17   GOOGLE-00296156-75; GOOGLE-00296453-60; GOOGLE-00296959-61; GOOGLE-

18   00296500-03; GOOGLE-00296507; GOOGLE-00297265; GOOGLE-00297033-38, GOOGLE-

19   00297252-57, GOOGLE-00297361-65 and similar questionnaires signed by other developers;

20   GOOGLE-00296203-07; GOOGLE-00296498-99; GOOGLE-00296523-24; GOOGLE-

21   00296525-26; GOOGLE-00297075-76; GOOGLE-00392221-24; GOOGLE-00392197;

22   GOOGLE-00392204-12; GOOGLE-00392198-203; GOOGLE-00392213-16; GOOGLE-

23   00392183-94; GOOGLE-00392181-82; GOOGLE-00392178-80; GOOGLE-02-00081462;

24   GOOGLE-03-00075095; GOOGLE-01-00029843-45; GOOGLE-01-00026813; GOOGLE-02-

25   00018744; GOOGLE-01-00025454; GOOGLE-01-00023889.

26   Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

27   and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

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1   responses are based on the information reasonably available at this time and Oracle will

2   supplement this response as appropriate under the Federal Rules of Civil Procedure.

3   **INTERROGATORY NO. 3:**

4   State in detail Oracle's factual bases for each element of indirect copyright infringement,

5   specifically including an identification of any direct infringement and a description of the acts of

6   the alleged indirect infringer that contribute to or are inducing that direct infringement.

7   **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 3:**

8   The factual bases for Oracle's indirect copyright infringement claim include facts

9   demonstrating Google's direct infringement (discussed in response to Interrogatory Nos. 2 and 6);

10   facts demonstrating that Google's infringement was done with knowledge of Oracle's copyrights

11   (discussed in response to Interrogatory No. 4); and facts demonstrating that users of the Android

12   Platform must copy and use portions of the Java Platform to manufacture and distribute Android

13   devices (discussed in response to Interrogatory No. 7). Google actively and explicitly encourages

14   the widespread adoption and implementation of the Android Platform by device manufacturers,

15   service providers, software companies, and application developers. *See*, *e.g.,*

16   developer.android.com. Google distributes the Android Platform through the Open Handset

17   Alliance and the Android Open Source Project with the express purpose of encouraging a broad

18   deployment of handsets and services using the Android Platform. *See*, *e.g.,*

19   openhandsetalliance.com.

20   Google intends for device manufacturers to use and copy the code from its repository

21   without modification. Manufacturers must execute Google's Compatibility Test Suite (CTS) for

22   Google to certify their devices as "Android Compatible." See GOOGLE-00296158. To ensure

23   they pass the test, "[d]evice implementers are strongly encouraged to base their implementations

24   on the 'upstream' source code available from the Android Open Source Project" *Id.* Moreover,

25   "[t]o ensure compatibility with third-party applications, device implementers MUST NOT make

26   any prohibited modifications . . . to these package namespaces: java.*; javax.*; sun.*; android.*;

27   com.android. . . . . Device implementers MAY modify the underlying implementation of the

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1 APIs, but such modifications MUST NOT impact the stated behavior and Java-language

2 signature of any publicly exposed APIs." GOOGLE-00296163.

3 **BEGIN GOOGLE HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

4 Examples of Google's contracts with handset manufacturers requiring that their products

5 pass the CTS can be found at GOOGLE-00393175-86; GOOGLE-00393210-22; and GOOGLE-

6 00393223-38.

7 **END GOOGLE HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

8 As Google intended, Android software and Android-based devices have in fact been

9 distributed by manufacturers and resellers, and copied, distributed, and supported by service

10 providers and application developers.

11 Additional supporting evidence of Google's indirect copyright infringement can be found

12 at, *e.g.*, GOOGLE-00296523-24; GOOGLE-00297404; GOOGLE-00297553-55; GOOGLE-

13 00300616-85; GOOGLE-00296389-99; GOOGLE-00296482-83; GOOGLE-00296156-75; and

14 GOOGLE-00392673-00393063.

15 Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

16 and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

17 responses are based on the information reasonably available at this time and Oracle will

18 supplement this response as appropriate under the Federal Rules of Civil Procedure.

19 **INTERROGATORY NO. 4:**

20 State in detail Oracle's factual bases for its claims that any copyright infringement by

21 Google (or for which Oracle claims Google is liable) was willful.

22 **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 4:**

23 Google has willfully infringed the copyrights in suit, which protect the Java Platform

24 source code and documentation. Many factors reveal that Google had knowledge that its actions

25 constituted copyright infringement or acted with reckless disregard for Oracle's rights. These

26 factors include:

27 • Google is a member of the Java Community Process (JCP) and has a seat on the

28 Java SE/EE Executive Committee. *See* Java Community Process homepage, available at

1   http://www.jcp.org/en/participation/committee. Through its participation in the JCP, Google is

2   well aware of the need to obtain a license from Oracle in order to make use of Oracle's Java

3   Platform technologies. Google's admissions in its Amended Counterclaims prove this awareness.

4   (*See, e.g.,* Google's Amended Counterclaims ¶¶ 6-7, 13.)

5   •   Former Oracle (Sun) employees having knowledge of the Java Platform have been

6   or are now employed by Google. Their knowledge is attributable to Google. The nature and

7   extent of such employees' involvement in the development of Android is the subject of current

8   outstanding Oracle discovery requests.

9   •   Andy Rubin, Google's VP of Mobile Platforms, previously worked at Danger,

10   Inc., which he founded. He understood the need to obtain a license from Oracle (then Sun) to use

11   Java Platform technologies in Danger's Hiptop operating system, and Danger did obtain a

12   commercial license. When Rubin left Danger and founded Android, Inc., he approached Sun

13   about obtaining a commercial license to Java Platform technologies on behalf of Android, Inc.

14   Those discussions ended without Android having obtained a commercial license. Rubin's

15   knowledge is attributable to Google.

16   •   Google has consistently resisted taking a license from Sun for Sun's copyrighted

17   Java Platform technologies.

18   •   In copying Oracle's Java Platform technologies, Google deliberately disregarded a

19   known risk that Oracle held copyrights covering Java Platform technologies.

20   •   Google's Android source code and documentation directly reference and copy

21   Java Platform technology specifications, documentation, and source code. *See, e.g.,*

22   dalvik\libcore\security\src\main\java\java\security\CodeSource.java (Froyo version);

23   dalvik\libcore\support\src\test\java\org\apache\harmony\security\tests\support\cert\PoicyNodeImp

24   l.java (Froyo version). Google admits that Android incorporates a subset of Apache Harmony,

25   which it asserts is "an implementation of Sun's Java." (*See, e.g.,* Google's Amended

26   Counterclaims ¶¶ 6-7, 13.)

27   •   Google's website content directly references and demonstrates use of Java

28   Platform technologies. *See, e.g.,* "What is Android?", available at

1   http://developer.android.com/guide/basics/what-is-android.html ("Android includes a set of core

2   libraries that provides most of the functionality available in the core libraries of the Java

3   programming language."); Package Index, available at

4   http://developer.android.com/reference/packages.html, and subsidiary webpages.

5   •   Google's Android videos directly reference and demonstrate use of Java Platform

6   technologies. *See, e.g.,* Google I/O 2008 Video entitled "Dalvik Virtual Machine Internals,"

7   presented by Dan Bornstein (Google), available at

8   http://developer.android.com/videos/index.html#v=ptjedOZEXPM.

9   •   Oracle's Java specifications bear copyright notices identifying them as being

10   Oracle's copyrighted works, as well as legends notifying the public that the technologies

11   described may be protected by Oracle's patents: "The release described in this manual may be

12   protected by one or more U.S. patents, foreign patents, or pending applications." *See*, *e.g., Java*

13   *Application Programming Interface, Vol. 1 Core Packages* ("© 1996 Sun Microsystems, Inc.");

14   *The Java Language Specification* ("© 1996 Sun Microsystems, Inc."). Google and its employees

15   were on notice of Oracle's proprietary rights before and during the development of Android.

16   Additional supporting evidence of Google's willful copyright infringement can be found

17   at, *e.g.,* GOOGLE-00248372; GOOGLE-00296156-75; GOOGLE-00296959-61; GOOGLE-

18   00296500-03; GOOGLE-00296507; GOOGLE-00297265; GOOGLE-00297033-38, GOOGLE-

19   00297252-57, GOOGLE-00297361-65 and similar questionnaires signed by other developers;

20   GOOGLE-00296203-07; GOOGLE-00296498-99; GOOGLE-00296523-24; GOOGLE-

21   00296525-26; GOOGLE-00297075-76; GOOGLE-00392221-24; GOOGLE-00392204-12;

22   GOOGLE-00392198-203; GOOGLE-00392213-16; GOOGLE-00392183-94; GOOGLE-

23   00392181-82; GOOGLE-00392178-80; GOOGLE-02-00081462; GOOGLE-03-00075095;

24   GOOGLE-01-00029843-45; GOOGLE-01-00026813; GOOGLE-02-00018744; GOOGLE-01-

25   00025454; and GOOGLE-01-00023889.

26   **BEGIN GOOGLE HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

27   Evidence of Google's knowledge that the Java APIs are copyrighted, and of Google's

28   decision to copy the Java platform technology anyway, despite its knowledge of the need for a

1   license to Sun's (now Oracle) intellectual property rights can be found at, *e.g.*, A. Rubin Dep. Ex.

2   7; GOOGLE-01-00011470; GOOGLE-01-00019527; and GOOGLE-01-00018470.

3   **END GOOGLE HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY**

4   Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

5   and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

6   responses are based on the information reasonably available at this time and Oracle will

7   supplement this response as appropriate under the Federal Rules of Civil Procedure.

8   **INTERROGATORY NO. 5:**

9   Identify with specificity all Android computer program code (or other materials) that

10   Oracle contends was directly copied from Oracle code (or other materials) and the Oracle code

11   (or other materials) from which Oracle contends the Android code or other materials were copied.

12   **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 5:**

13   Android Application Programmer Interface (API) package specifications (whether or not

14   from the Apache Harmony project) that correspond to Oracle's Java API specifications are

15   unauthorized derivative work, and Google's unauthorized copying and distribution of them is

16   copyright infringement. A comparison of Android's API package specifications (available at

17   http://developer.android.com/reference/packages.html) with Oracle's copyrighted Java API

18   package specifications (for example, available at

19   http://download.oracle.com/javase/1.5.0/docs/api/,

20   http://download.oracle.com/javase/1.4.2/docs/api, and

21   http://download.oracle.com/javase/1.3/docs/api/) demonstrates that the following Android

22   package specifications are derived from or substantially similar to Oracle's copyrighted Java API

23   package specifications:

24   1.   java.awt.font

25   2.   java.beans

26   3.   java.io

27   4.   java.lang

28   5.   java.lang.annotation

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1	6.	java.lang.ref
2	7.	java.lang.reflect
3	8.	java.math
4	9.	java.net
5	10.	java.nio
6	11.	java.nio.channels
7	12.	java.nio.channels.spi
8	13.	java.nio.charset
9	14.	java.nio.charset.spi
10	15.	java.security
11	16.	java.security.acl
12	17.	java.security.cert
13	18.	java.security.interfaces
14	19.	java.security.spec
15	20.	java.sql
16	21.	java.text
17	22.	java.util
18	23.	java.util.jar
19	24.	java.util.logging
20	25.	java.util.prefs
21	26.	java.util.regex
22	27.	java.util.zip
23	28.	javax.crypto
24	29.	javax.crypto.interfaces
25	30.	javax.crypto.spec
26	31.	javax.net
27	32.	javax.net.ssl
28	33.	javax.security.auth

1   34.   javax.security.auth.callback

2   35.   javax.security.auth.login

3   36.   javax.security.auth.x500

4   37.   javax.security.cert

5   38.   javax.sql

6   39.   javax.xml

7   40.   javax.xml.datatype

8   41.   javax.xml.namespace

9   42.   javax.xml.parsers

10   43.   javax.xml.transform

11   44.   javax.xml.transform.dom

12   45.   javax.xml.transform.sax

13   46.   javax.xml.transform.stream

14   47.   javax.xml.validation

15   48.   javax.xml.xpath

16   Some Android package API specifications are substantially similar to selected portions of

17 some of the Oracle Java API package specifications (*e.g.,* java.awt.font, java.beans) while other

18 Android package API specifications are substantially similar to complete portions of other Oracle

19 Java API package specifications (*e.g.,* java.io, java.lang, java.net, java.nio, java.security, java.sql,

20 java.text).

21   The Android source and object code (whether or not from the Apache Harmony project)

22 that purports to implement Oracle's Java API specifications is unauthorized derivative work, and

23 Google's unauthorized copying and distribution of it is copyright infringement. *See, e.g.,*

24 Package Index (available at http://developer.android.com/reference/packages.html), including

25 those API packages listed above, and subsidiary webpages; and source code and documentation

26 files available in:[12]

_____

27   [12] Google continues to modify the source code available through http://android.git.kernel.org. Such changes
are subject to the discovery Oracle has propounded on Google. In any event, the cited source code examples are

28   (Footnote continues on next page.)

1   For Android 2.2 ("Froyo"):

2   •   dalvik\libcore\security\src\main\java\java\security;

3   •   dalvik\libcore\security\src\main\java\javax\security\cert;

4   •   dalvik\libcore\security\src\main\java\org\apache\harmony\security;

5   •   dalvik\libcore\math\src\main\java\java\math;

6   •   dalvik\libcore\math\src\main\java\org\apache\harmony\math;

7   •   dalvik\libcore\luni\src\main\java\java;

8   •   dalvik\libcore\luni\src\main\java\org\apache\harmony\luni;

9   •   dalvik\libcore\luni-kernel\src\main\java\java\lang;

10   •   dalvik\libcore\luni-kernel\src\main\java\org\apache\harmony\kernel;

11   •   dalvik\libcore\luni-kernel\src\main\java\org\apache\harmony\lang;

12   •   dalvik\libcore\nio\src\main\java\java.

13 For Android 2.3 ("Gingerbread"):

14   •   libcore\luni\src\main\java\java\security;

15   •   libcore\luni\src\main\java\javax\security\cert;

16   •   libcore\luni\\src\main\java\org\apache\harmony\security;

17   •   libcore\luni\src\main\java\java\math;

18   •   libcore\luni\src\main\java\java;

19   •   libcore\luni\src\main\java\org\apache\harmony\luni;

20   •   libcore\luni\src\main\java\java\lang;

21   •   libcore\luni\src\main\java\org\apache\harmony\kernel;

22   •   libcore\luni\src\main\java\org\apache\harmony\lang;

23   •   libcore\luni\src\main\java\java\nio.

(Footnote continued from previous page.)

taken from http://android.git.kernel.org/. The citations are shortened and mirror the file paths shown in http://android.git.kernel.org/. For example, "dalvik\vm\native\InternalNative.c" maps to "[platform/dalvik.git] / vm / native / InternalNative.c" (accessible at http://android.git.kernel.org/?p=platform/dalvik.git;a=blob;f=vm/native/InternalNative.c) before modification by Google.

1   Google has created and distributed infringing works written in native code, in addition to

2 Java code, that derive from Oracle's copyrighted works. For example, Google makes and

3 distributes dalvik\vm\native\java_lang_Class.c, which is based on Oracle's java.lang.Class

4 specification. Other examples include:

5   • dalvik\vm\native\java_lang_Object.c

6   • dalvik\vm\native\java_lang_reflect_AccessibleObject.c;

7   • dalvik\vm\native\java_lang_reflect_Array.c;

8   • dalvik\vm\native\java_lang_reflect_Constructor.c;

9   • dalvik\vm\native\java_lang_reflect_Field.c;

10   • dalvik\vm\native\java_lang_reflect_Method.c;

11   • dalvik\vm\native\java_lang_reflect_Proxy.c;

12   • dalvik\vm\native\java_lang_Runtime.c;

13   • dalvik\vm\native\java_lang_String.c;

14   • dalvik\vm\native\java_lang_System.c;

15   • dalvik\vm\native\java_lang_Throwable.c;

16   • dalvik\vm\native\java_lang_VMClassLoader.c;

17   • dalvik\vm\native\java_lang_VMThread.c; and

18   • dalvik\vm\native\java_security_AccessController.c.

19   *See also, e.g.,* source code files in libcore\luni\src\main\native; libcore\luni-

20 kernel\src\main\native.

21   Google has distributed by way of Android and Android-related websites source and object

22 code derived from or substantially similar to Oracle's source code or to decompiled Oracle object

23 code, including:

24   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Acl

25   EntryImpl.java (which is substantially similar to the result of decompiling Oracle's

26   /sun/security/acl/AclEntryImpl.class)

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28

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1   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Acl

2   Impl.java (which is substantially similar to the result of decompiling Oracle's

3   /sun/security/acl/AclImpl.class)

4   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Gro

5   upImpl.java (which is substantially similar to the result of decompiling Oracle's

6   /sun/security/acl/GroupImpl.class)

7   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Ow

8   nerImpl.java (which is substantially similar to the result of decompiling Oracle's

9   /sun/security/acl/OwnerImpl.class)

10   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Per

11   missionImpl.java (which is substantially similar to the result of decompiling Oracle's

12   /sun/security/acl/PermissionImpl.class)

13   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Pri

14   ncipalImpl.java (which is substantially similar to the result of decompiling Oracle's

15   /sun/security/acl/PrincipalImpl.class)

16   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/cert/Po

17   licyNodeImpl.java (which is substantially similar to the result of decompiling Oracle's

18   /sun/security/acl/PolicyNodeImpl.class)

19   • /dalvik/libcore/support/src/test/java/org/apache/harmony/security/tests/support/acl/Acl

20   Enumerator.java (which was obtained by decompiling Oracle's

21   /sun/security/acl/AclEnumerator.class)

22   • /dalvik/libcore/luni/src/main/java/java/util/TimSort.java contains a method,

23   rangeCheck, copied from Oracle's java/util/Arrays.java

24   • /dalvik/libcore/luni/src/main/java/java/util/ComparableTimSort.java contains a

25   method, rangeCheck, copied from Oracle's java/util/Arrays.java

26   • /dalvik/libcore/security/src/test/java/org/apache/harmony/security/tests/java/security/C

27   odeSourceTest.java contains comments copied from Oracle's

28   /java/security/CodeSource.java

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1   • /dalvik/libcore/security/src/test/java/tests/security/cert/CollectionCertStoreParameters

2   Test.java contains comments copied from Oracle's

3   /java/security/cert/CollectionCertStoreParameters.java

4   Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

5   and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

6   responses are based on the information reasonably available at this time and Oracle will

7   supplement this response as appropriate under the Federal Rules of Civil Procedure.

8   **INTERROGATORY NO. 6:**

9   State in detail Oracle's factual bases for its contention that approximately one third of

10   Android's Application Programmer Interface (API) packages (available at

11   http://developer.android.com/reference/packages.html) are derivative of Oracle America's

12   copyrighted Java API packages (available at http://download-

13   llnw.oracle.com/javase/1.5.0/docs/api/ and http://download-

14   llnw.oracle.com/javase/1.4.2/docs/api/) and corresponding documents.

15   **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 6:**

16   Forty-eight of Google's Android API package specifications are derived from or

17   substantially similar to Oracle's Java SE API package specifications, which is about one-third of

18   the total number of Android API package specifications.[13] The list of packages includes:

19   java.awt.font, java.beans, java.io, java.lang, java.lang.annotation, java.lang.ref, java.lang.reflect,

20   java.math, java.net, java.nio, java.nio.channels, java.nio.channels.spi, java.nio.charset,

21   java.nio.charset.spi, java.security, java.security.acl, java.security.cert, java.security.interfaces,

22   java.security.spec, java.sql, java.text, java.util, java.util.jar, java.util.logging, java.util.prefs,

23   java.util.regex, java.util.zip, javax.crypto, javax.crypto.interfaces, javax.crypto.spec, javax.net,

24   [13] It appears that Google may have modified its list of Android API packages (available at
http://developer.android.com/reference/packages.html) after Oracle's initial response to this interrogatory. In
25   particular, Google added packages to its Android APIs, totaling 154 (as of April 14, 2011), instead of 146 around the
time Oracle amended its complaint. Still, approximately one-third of Android's API packages (available at
26   http://developer.android.com/reference/packages.html) are duplicative of Oracle's copyrighted Java API packages
(available at http://download-llnw.oracle.com/javase/1.5.0/docs/api/ and http://download-
27   llnw.oracle.com/javase/1.4.2/docs/api/).

28

1 javax.net.ssl, javax.security.auth, javax.security.auth.callback, javax.security.auth.login,

2 javax.security.auth.x500, javax.security.cert, javax.sql, javax.xml, javax.xml.datatype,

3 javax.xml.namespace, javax.xml.parsers, javax.xml.transform, javax.xml.transform.dom,

4 javax.xml.transform.sax, javax.xml.transform.stream, javax.xml.validation, and javax.xml.xpath.

5   Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

6 and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

7 responses are based on the information reasonably available at this time and Oracle will

8 supplement this response as appropriate under the Federal Rules of Civil Procedure.

9 **INTERROGATORY NO. 7:**

10   State in detail Oracle's factual bases for the allegation that users must copy and use

11 infringing Java class libraries, or works derived therefrom, to manufacture and use functioning

12 Android devices.

13 **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 7:**

14   Factual bases for the allegation that users must copy and use infringing Java class

15 libraries, or works derived therefrom, to manufacture and use functioning Android devices

16 include:

17   •   Forty-eight of Google's Android API package specifications are derived from or

18 substantially similar to Oracle's Java SE API package specifications, which is about one-third of

19 the total number of Android API package specifications.[14] The list of packages includes:

20 java.awt.font, java.beans, java.io, java.lang, java.lang.annotation, java.lang.ref, java.lang.reflect,

21 java.math, java.net, java.nio, java.nio.channels, java.nio.channels.spi, java.nio.charset,

22 java.nio.charset.spi, java.security, java.security.acl, java.security.cert, java.security.interfaces,

23 java.security.spec, java.sql, java.text, java.util, java.util.jar, java.util.logging, java.util.prefs,

24   [14] It appears that Google may have modified its list of Android API packages (available at
http://developer.android.com/reference/packages.html) after Oracle's initial response to this interrogatory. In

25 particular, Google added packages to its Android APIs, totaling 154 (as of April 14, 2011), instead of 146 around the
time Oracle amended its complaint. Still, approximately one-third of Android's API packages (available at

26 http://developer.android.com/reference/packages.html) are duplicative of Oracle's copyrighted Java API packages
(available at http://download-llnw.oracle.com/javase/1.5.0/docs/api/ and http://download-

27 llnw.oracle.com/javase/1.4.2/docs/api/).

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1   java.util.regex, java.util.zip, javax.crypto, javax.crypto.interfaces, javax.crypto.spec, javax.net,

2   javax.net.ssl, javax.security.auth, javax.security.auth.callback, javax.security.auth.login,

3   javax.security.auth.x500, javax.security.cert, javax.sql, javax.xml, javax.xml.datatype,

4   javax.xml.namespace, javax.xml.parsers, javax.xml.transform, javax.xml.transform.dom,

5   javax.xml.transform.sax, javax.xml.transform.stream, javax.xml.validation, and javax.xml.xpath.

6   •   Manufacturers of handsets and other Android devices copy compiled versions of

7   the Java class libraries onto each Android device prior to distribution.

8   •   Google's Android SDK download page directed developers to copy the Java class

9   libraries from the Apache Harmony project website.

10 •   Google's Android source code and documentation demonstrate use of Java

11 Platform technologies. *See*, *e.g.*, android.git.kernel.org; developer.android.com.

12 •   Manufacturers must execute Google's Android Compatibility Test Suite (CTS),

13 which tests for the presence and correct functioning of Java class libraries, for Google to certify

14 their devices as "Android Compatible."

15 Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

16 and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

17 responses are based on the information reasonably available at this time and Oracle will

18 supplement this response as appropriate under the Federal Rules of Civil Procedure.

19 **INTERROGATORY NO. 8:**

20 Identify with specificity all portions of the Java documentation that were automatically

21 generated using software and explain how each was generated.

22 **RESPONSE TO INTERROGATORY NO. 8:**

23 Generally, all Java API documentation is automatically generated using the Javadoc

24 software tool. Javadoc is a documentation generator developed by Sun Microsystems. Javadoc is

25 used to generate API documentation in HTML format from Java source code, based on

26 standardized tags and comments written by source code programmers. A Javadoc comment is set

27 off from source code by comment tags "/**" and "*/". For example, the first paragraph in such a

28 comment may be a description of the method documented. Next, certain tags are used to signify

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1 certain information (*e.g.,* @param name description describes a method parameter, @return

2 description describes a method return value, @throws describes an exception the method may

3 throw).

4   Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

5 and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

6 responses are based on the information reasonably available at this time and Oracle will

7 supplement this response as appropriate under the Federal Rules of Civil Procedure.

8 **INTERROGATORY NO. 9:**

9   State in detail the terms of a fair, reasonable and non-discriminatory license to Oracle's

10 TCK consistent with Oracle's obligations under the Java Specification Participation Agreement,

11 including the bases of any computation of any monetary elements of such a license and an

12 explanation of why such a license is fair, reasonable and non-discriminatory.

13 **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 9:**

14   The JSPA permits a Specification Lead to impose terms and conditions as part of a TCK

15 license. Any interested party may license the Spec Lead's TCK under "non-discriminatory, fair

16 and reasonable" terms and conditions and "such terms and conditions shall be determined by the

17 Spec Lead in its reasonable discretion." (JSPA, § 5.F.I.) Oracle's TCK licenses comport with its

18 obligations under the JSPA, and, with respect to the terms of its TCK licenses, Oracle directs

19 Google to its TCK licenses produced in this action pursuant to Fed. R. Civ. P. 33(d).

20   As for the terms of any TCK license to Android, none has ever been requested, and Oracle

21 accordingly has never considered what reasonable terms or royalty computation of one might be.

22 Issuing a TCK license to Android makes no sense, given that Android does not implement the

23 entire Java specification and is accordingly not compliant.

24   During the Parties' discovery conference on February 9, 2011, Google offered to revise

25 this interrogatory such that it seeks an explanation of how Java prices are determined by Oracle,

26 and Oracle agreed to answer the revised interrogatory. Oracle determines Java prices as follows:

27 Ed Washington, Principal Product Manager, reviews and determines appropriate prices based on

28 market information, which he receives from Oracle's salespeople, product managers, and also on

1   his own knowledge and experience. He aims to set competitive and profitable prices. Mr.

2   Washington has reviewed and determined Java prices since 2002, and Mr. Washington has been

3   in JavaSoft sales since 1997. Java prices generally decline reasonably as market conditions

4   evolve. New products are priced to be competitive and in line with market expectations based on

5   how older products are priced. The price models Mr. Washington proposes are reviewed and

6   approved by Oracle's Vice President of Software Sales before implementation. Java prices were

7   previously posted in Sun's internal web servers and are now posted on Oracle's internal web

8   servers. Oracle has already produced these documents in part. *See* OAGOOGLE0100067049-

9   100067059 and OAGOOGLE0100067060-100067206.

10   In addition to the general objections stated above, Oracle further objects to this

11   interrogatory insofar as it seeks information protected from discovery by the attorney-client

12   privilege or the attorney work-product doctrine. Oracle further objects to this request on the

13   grounds that determinations of why or whether the terms of any license are fair, reasonable, and

14   non-discriminatory are purely matters of legal opinion and are therefore not within the scope of

15   inquiry permitted by Fed. R. Civ. P. 33(a)(2). Discovery is ongoing, and Oracle has not yet

16   completed its investigation of the documents and facts relevant to the claims and defenses

17   asserted in this action. Accordingly, Oracle's responses are based on the information reasonably

18   available at this time and Oracle will supplement this response as appropriate under the Federal

19   Rules of Civil Procedure.

20   **INTERROGATORY NO. 10:**

21   State in detail Oracle's factual bases for its allegation that the doctrine of assignor

22   estoppel bars Google from challenging the validity of each of the patents-in-suit to which Oracle

23   contends the doctrine applies.

24   **FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 10:**

25   Assignor estoppel bars Google from challenging the validity of any patent assigned by an

26   inventor with whom Google is in privity. Google hired named inventors of Oracle's patents—

27   including at least Frank Yellin, co-inventor of the '520 patent; Lars Bak and Robert Griesemer,

28   co-inventors of the '205 patent; and James Gosling, the inventor of the '104 patent—to work on

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1 Java, Web browser, and virtual machine technologies. Google is in the best position to know how

2 it availed itself of the inventors' knowledge and assistance. As the inventors' employer, it is

3 Google, not Oracle that possesses detailed information regarding the nature of the relationship

4 with these and any of the other inventors of the patents-in-suit.

5   Discovery is ongoing, and Oracle has not yet completed its investigation of the documents

6 and facts relevant to the claims and defenses asserted in this action. Accordingly, Oracle's

7 responses are based on the information reasonably available at this time and Oracle will

8 supplement this response as appropriate under the Federal Rules of Civil Procedure.

9

10 Dated: April 25, 2011   MICHAEL A. JACOBS
                                         MARC DAVID PETERS
                                         DANIEL P. MUINO
11   MORRISON & FOERSTER LLP

12

13   By: /s/ Marc David Peters

14   *Attorneys for Plaintiff*
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CERTIFICATE OF SERVICE

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I declare that I am employed with the law firm of Morrison & Foerster LLP, whose address

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is 755 Page Mill Road, Palo Alto, California 94304-1018. I am not a party to the within cause, and I am over the age of eighteen years.

4

I further declare that on April 25, 2011, I served a copy of:

5

PLAINTIFF'S SUPPLEMENTAL RESPONSES TO DEFENDANT'S INTERROGATORY NOS. 1-10

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☒   **BY ELECTRONIC SERVICE [Fed. Rule Civ. Proc. rule 5(b)]** by electronically

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mailing a true and correct copy through Morrison & Foerster LLP's electronic mail system to the e-mail address(es) set forth below, or as stated on the attached service

9

list per agreement in accordance with Federal Rules of Civil Procedure rule 5(b).

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          I declare under penalty of perjury under the laws of the United States that the foregoing is
14   true and correct.

15   Executed at Palo Alto, California, this 25th day of April, 2011.

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19   _____   _____
             Marc David Peters   /s/ Marc David Peters
20   (typed)   (signature)

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